**Welfare Significance**

1. Physical castration causes pain and side effects.
2. Young calves recover quicker and have fewer complications than older calves.
3. Acute pain caused by Burdizzo methods is less than that caused by surgical, rubber-ring or latex-band castration.
4. There is no evidence to show young calves experience less pain than older calves.
5. Local anaesthesia eliminates acute pain caused by rubber-ring or latex-band castration.
6. Local anaesthesia combined with a systemic analgesic, such as the non-steroidal anti-inflammatory drug ketoprofen, eliminates pain caused by Burdizzo or surgical castration.
7. Ketoprofen alone may not eliminate pain-induced behaviour seen during the castration process.
8. Castration of older males without anaesthesia is deemed inhumane and unethical.
9. Use of pain relief is an additional cost for producers. Pain relief may be limited by the availability of drugs for farmers to use and the scarcity of veterinarians in farm animal practice.